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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,429	01/21/2004	Heng-Chuan Wang	09405.0001-00000	5189

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FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER  
LLP  
901 NEW YORK AVENUE, NW  
WASHINGTON, DC 20001-4413

EXAMINER

AFREMOVA, VERA

ART UNIT	PAPER NUMBER
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1651

DATE MAILED: 08/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/762,429

Applicant(s)

WANG ET AL.

Examiner

Vera Afremova

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 20-25 and 58-64 is/are pending in the application.
- 4a) Of the above claim(s) 58-64 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/02/2006</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Claims 20-25 as amended (6/02/2006) and new claims 58-64 (6/02/2006) are pending.

Original claims 1-19 and 26-57 are canceled by applicants.

#### ***Election/Restrictions***

The presently pending claims 20-25 and 58-64 are subject to restriction requirement.

Restriction to one of the following inventions is required under 35 U.S.C. 121:

(The instant grouping of claims follows the grouping of the originally presented claims as explained in the office action mailed 12/25/2005).

A (original group III). Claims 20-25 (original and/or as amended), drawn to a flocculant comprising a soybean protein, classified in class 424, subclass 757, for example.

B. (original group X). New claims 58-64 (original claims 54-56, presently canceled), drawn to a method of using a flocculant preparation comprising a soybean protein for treating water, classified in class 210, subclass 749, for example.

Inventions A (original group III) and B (original group X) are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case the product as claimed can be used in a materially different process of culturing microbial cells as a culture medium composition with soybean proteins as demonstrated by the cited reference by Atlas.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution

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on the merits. Accordingly, claims 58-64 have been withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03. Thus, this application contains claims 58-64 drawn to an invention nonelected by original presentation with traverse in Paper filed 1/20/2006. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claims 20-25 as amended (6/02/2006) are under examination in the instant office action.

8.21.04. The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and the product claims are subsequently found allowable, withdrawn process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for rejoinder. All claims directed a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103 and 112. Until all claims to the elected product are found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowable product claim will not be rejoined. See MPEP § 821.04(b). Additionally, in order to retain the right to rejoinder in accordance with the above policy, applicant is advised that the process claims should be amended during prosecution to require the limitations of the product claims. Failure to do so may result in a loss of the right to rejoinder. Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 20-25 as amended remain rejected under 35 U.S.C. 102(b) as being anticipated by Atlas R. M. (Handbook of Microbiological Media. CRC Press, Inc. 1993. page 820) as explained in the prior office action.

Claims are directed to a composition comprising a soybean protein in amounts at least 15 g/L or 15-120 g/L. Some claims are further drawn to the soybean protein that has been subjected to thermal treatments at 121°C at 1.5 atm for 20 minutes.

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The reference by Atlas R. M. discloses a bacterial medium composition comprising a soybean protein in amounts at least 15 g/L or 15-120 g/L. For example: Soy Peptone Broth with 20 g/L of papaic digest of soybean meal that is a "soybean protein" preparation. Another example: Soybean Agar that is made with 100 g/L of soybeans that is a "soybean protein" product. The soybean protein is subjected to sterilization by thermal treatment such as exposure to 121°C at 15 psi (1 atm) for 15 minutes. The claimed soybean protein subjected to thermal treatments is a product-by-process type of claim. The product-by-process claims are not limited to the manipulations of the recited steps, only to the structure of the final product obtained. MPEP 2113. The final product as disclosed is sterilized by thermal treatment. It is sterile and suitable for culturing microbes including *Bacillus* and, thus, it is the same as intended for the applicants' composition with soybean proteins when claims are read in the light of specification, for example: table 6. Therefore, the cited reference anticipates the claims invention.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 20-25 as amended remain rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,105,804 (Terui et al.) and US 4,059,572 (Nakamura et al.) taken with Talaro et al. (Foundations in Microbiology. Wm. C. Brown Publishers. 1993, pages 272-274.) as explained in the prior office action.

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Claims are directed to a flocculant composition comprising a soybean protein in amounts at least 15 g/L or 15-120 g/L. Some claims are further drawn to the soybean protein that has been subjected to thermal treatments at 121°C at 1.5 atm for 20 minutes.

The cited patents US 4,105,804 (Terui et al.) and US 4,059,572 (Nakamura et al.) disclose flocculant compositions comprising a soybean protein. In particular compositions the amounts of soybean proteins are less than 15 g/L as disclosed. However, both reference demonstrate that flocculation effect of soybean protein preparation is in direct relationship with concentration. For example: see US 4,105,804 (Terui et al.) teaches the use of soybean proteins for separation of bacterial cells from a culture broth and it demonstrates that amounts of precipitated bacterial cells increase with the increases of amounts of soybean powder added (entire document including col. 3, lines 15-18). The cited US 4,059,572 (Nakamura et al.) discloses determination of flocculation activity of various compounds including soybean proteins and it demonstrate that sedimentation rate or flocculation activity of soybean protein directly depends on concentration (col. 5, lines 35; col. 4, lines 55-57 and col.3, lines 31-33).

The cited patents US 4,105,804 (Terui et al.) and US 4,059,572 (Nakamura et al.) are silent about thermal treatment of soybean proteins.

However, the reference by Talaro et al. teaches that the use of thermal treatment for sterilization and it discloses efficient pressure-temperature-time combinations depending on contaminants, substrate and the use of moist or dry heat (tables 9.2, 9.3 and 9.4). The disclosed ranges for pressure-temperature-time combinations include the presently claimed parameters.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to increase amounts of soybean proteins in flocculant

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compositions of US 4,105,804 (Terui et al.) and US 4,059,572 (Nakamura et al) with a reasonable expectation of success in increasing flocculation activity of soybean proteins as adequately suggested by of US 4,105,804 (Terui et al.) and US 4,059,572 (Nakamura et al) because flocculation effect of soybean proteins is in direct relationship with concentration as demonstrated by US 4,105,804 (Terui et al.) and US 4,059,572 (Nakamura et al). One of skill in the art would have been motivated to subject soybean proteins to sterilization by thermal treatment for the expected benefits in avoiding growth of undesirable microorganisms and/or for the reasons of food safety. Thus, the claimed invention as a whole was clearly *prima facie* obvious, especially in the absence of evidence to the contrary.

The claimed subject matter fails to patentably distinguish over the state art as represented by the cited references. Therefore, the claims are properly rejected under 35 USC § 103.

#### ***Response to Arguments***

Applicant's arguments filed 6/02/2006 have been fully considered but they are not persuasive.

With regard to the claim rejection under 35 U.S.C. 102(b) as being anticipated by Atlas R. M. applicants argue (response pages 6-7) that the cited compositions contain less than 15 g/L of soybean protein because original "soybean meal" in the medium component identified as "papaic digest of soybean meal" is expected to contain only about 50% of protein in view of information provided by Exhibits filed on 6/02/2006. This argument is not found particularly persuasive because the purity of the claimed preparation or the claimed product such as "a flocculant comprising soybean protein" is not defined by the claims and it is also unknown when read in the light of specification. Or, in alternative, the meaning of claimed subject matter is

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rather ambiguous because the claimed amount appears to be applied to either “protein” or to “flocculant” in the whole composition as presently amended.

Applicants further argue (response page 7) that the second medium disclosed by Atlas that is made from white soybeans contains less than 15 g/l of soybean protein because it is filtered after thermal treatment and, thus, some proteins would be denatured and/or lost. At the very least this argument is not persuasive because soybeans contains 40% of proteins in view of information provided by applicants’ Exhibits filed on 6/02/2006. Thus, the amount of 100 g/L of soybeans provide for 40 g/l of soy protein(s). The disclosed white soybean preparation is also subjected to thermal treatment as required by the claimed invention. Thus, the autoclaved soybean mixture of the reference by Atlas is identical to the claimed composition.

With regard to the claim rejection under 35 USC § 103 applicants argue (response page 8-9) that the soybean protein flocculant of the prior art (US 4,105,804) is used to flocculate bacterial cells but the soybean protein flocculant of the instant invention is intended to flocculate other than bacteria materials. However, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). In the instant case, the cited US 4,105,804 clearly demonstrates that the amount of precipitated bacterial cells increase as the amounts of soybean protein flocculant preparation increase, for example: see at col. 1, lines 60-62 and/or Fig. 3. Thus, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to increase amounts of soybean proteins in flocculant compositions of US 4,105,804 (Terui et al.), for example.



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With regard to the cited US 4,059,572 (Nakamura et al) applicant argue that the cited patent recognizes mucopolysaccharide as a flocculant in the mixture of soybean protein and mucopolysaccharide during sedimentation or co-precipitation. Nevertheless, the fact of co-precipitation demonstrates that soybean protein is capable to be used as flocculant for materials other than bacterial cells.

No claims are allowed.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vera Afremova whose telephone number is (571) 272-0914. The examiner can normally be reached from Monday to Friday from 9.30 am to 6.00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached at (571) 272-0926.

The fax phone number for the TC 1600 where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology center 1600, telephone number is (571) 272-1600.

Vera Afremova

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August 16, 2006

A handwritten signature in black ink, appearing to read 'V. Afremova', with a long horizontal flourish extending to the right.

VERA AFREMOVA

PRIMARY EXAMINER